

## **STIC Biotechnology Systems Branch**

### **RAW SEQUENCE LISTING ERROR REPORT**

**The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) detected errors when processing the following computer readable form:**

Application Serial Number: 10/669,781A  
Source: 1Fu16  
Date Processed by STIC: 8/30/06

**THE ATTACHED PRINTOUT EXPLAINS DETECTED ERRORS.**

**PLEASE FORWARD THIS INFORMATION TO THE APPLICANT BY EITHER:**

- 1) **INCLUDING A COPY OF THIS PRINTOUT IN YOUR NEXT COMMUNICATION TO THE APPLICANT, WITH A NOTICE TO COMPLY or,**
- 2) **TELEPHONING APPLICANT AND FAXING A COPY OF THIS PRINTOUT, WITH A NOTICE TO COMPLY**

**FOR CRF SUBMISSION AND PATENTIN SOFTWARE QUESTIONS, PLEASE CONTACT MARK SPENCER, TELEPHONE: 571-272-2510; FAX: 571-273-0221**

**TO REDUCE ERRORED SEQUENCE LISTINGS, PLEASE USE THE CHECKER VERSION 4.4.0 PROGRAM, ACCESSIBLE THROUGH THE U.S. PATENT AND TRADEMARK OFFICE WEBSITE. SEE BELOW FOR ADDRESS:**

**<http://www.uspto.gov/web/offices/pac/checker/chkrnote.htm>**

Applicants submitting genetic sequence information electronically on diskette or CD-Rom should be aware that there is a possibility that the disk/CD-Rom may have been affected by treatment given to all incoming mail.

Please consider using alternate methods of submission for the disk/CD-Rom or replacement disk/CD-Rom.

Any reply including a sequence listing in electronic form should NOT be sent to the 20231 zip code address for the United States Patent and Trademark Office, and instead should be sent via the following to the indicated addresses:

1. **EFS-Bio (<<http://www.uspto.gov/ebc/efs/downloads/documents.htm>> , EFS Submission User Manual - ePAVE)**
2. **U.S. Postal Service: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450**
3. **Hand Carry, Federal Express, United Parcel Service, or other delivery service (EFFECTIVE 01/14/05): U.S. Patent and Trademark Office, Mail Stop Sequence, Customer Window, Randolph Building, 401 Dulany Street, Alexandria, VA 22314**

Revised 01/10/06



IFW16

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/669,781A

DATE: 08/30/2006

TIME: 10:14:33

Input Set : F:\6031.79428 sequence.listing.ST25.txt  
 Output Set: N:\CRF4\08302006\J669781A.raw

3 <110> APPLICANT: Finnfeeds International, Ltd.  
 5 <120> TITLE OF INVENTION: Phytase from Bacillus subtilis, gene encoding said phytase,  
 6 method for its production and use  
 8 <130> FILE REFERENCE: 79428  
 10 <140> CURRENT APPLICATION NUMBER: 10/669,781A *all pp 1-10*  
 11 <141> CURRENT FILING DATE: 2003-09-24  
 13 <160> NUMBER OF SEQ ID NOS: 36  
 15 <170> SOFTWARE: PatentIn version 3.3

## ERRORED SEQUENCES

E--> 17 <210> SEQ ID NO: ~~SEQ ID NO:1~~ *do not insert alphabetical headings. The CRF software will insert them for clarity.*  
 18 <211> LENGTH: 1290  
 19 <212> TYPE: DNA  
 20 <213> ORGANISM: Bacillus subtilis; Strain: B13  
 23 <220> FEATURE:  
 24 <221> NAME/KEY: CDS  
 25 <222> LOCATION: (91)..(1239)  
 27 <400> SEQUENCE: 1  
 28 cacatttgac aattttcaca aaaacttaac actgacaatc atgttatata gttacaattg 60  
 30 aagtgcacgt tcataaaaagg aggaagtaaa atg aat cat tca aaa aca ctt ttg 114  
 31 Met Asn His Ser Lys Thr Leu Leu  
 32 1 5  
 34 tta acc gcg gcg gca ctg atg ctc aca tgc ggt gcg gtg tct tcc 162  
 35 Leu Thr Ala Ala Gly Leu Met Leu Thr Cys Gly Ala Val Ser Ser  
 36 10 15 20  
 38 cag gca aag cat aag ctg tcc gat cct tat cat ttt acc gtg aat gca 210  
 39 Gln Ala Lys His Lys Leu Ser Asp Pro Tyr His Phe Thr Val Asn Ala  
 40 25 30 35 40  
 42 gcg gcg gaa acg gaa ccg gtt gat acg gcc qgt gac gcg qct gat gat 258  
 43 Ala Ala Glu Thr Glu Pro Val Asp Thr Ala Gly Asp Ala Ala Asp Asp  
 44 45 50 55  
 46 cct gcg att tgg ctg gac ccc aag act cct cag aac agc aaa ttg att 306  
 47 Pro Ala Ile Trp Leu Asp Pro Lys Thr Pro Gln Asn Ser Lys Leu Ile  
 48 60 65 70  
 50 acg acc aat aaa tca ggt tta gtc gtt tac agc ctt gat ggt aag 354  
 51 Thr Thr Asn Lys Lys Ser Gly Leu Val Val Tyr Ser Leu Asp Gly Lys  
 52 75 80 85  
 54 atg ctt cat tcc tat aat acc ggg aag ctg aac aat gtc gat atc cgt 402  
 55 Met Leu His Ser Tyr Asn Thr Gly Lys Leu Asn Asn Val Asp Ile Arg  
 56 90 95 100  
 58 tat gat ttt ccg ttg aac ggc aaa aaa gtc gat atc gcg gca gca tcc 450

*Does Not Comply  
Corrected Diskette Needed*

## RAW SEQUENCE LISTING

DATE: 08/30/2006

PATENT APPLICATION: US/10/669,781A

TIME: 10:14:33

Input Set : F:\6031.79428 sequence.listing.ST25.txt  
 Output Set: N:\CRF4\08302006\J669781A.raw

59	Tyr	Asp	Phe	Pro	Leu	Asn	Gly	Lys	Lys	Val	Asp	Ile	Ala	Ala	Ala	Ser	
60	105				110					115						120	
62	aat	cgg	tct	gaa	gga	aaa	aat	acc	att	gag	att	tac	gct	att	gat	gga	498
63	Asn	Arg	Ser	Glu	Gly	Lys	Asn	Thr	Ile	Glu	Ile	Tyr	Ala	Ile	Asp	Gly	
64					125					130						135	
66	aaa	aac	ggc	aca	tta	caa	agc	atg	aca	gat	cca	gac	cat	ccg	att	gca	546
67	Lys	Asn	Gly	Thr	Leu	Gln	Ser	Met	Thr	Asp	Pro	Asp	His	Pro	Ile	Ala	
68					140					145						150	
70	aca	gca	att	aat	gag	gta	tac	ggt	ttt	acc	tta	tac	cac	agt	caa	aaa	594
71	Thr	Ala	Ile	Asn	Glu	Val	Tyr	Gly	Phe	Thr	Leu	Tyr	His	Ser	Gln	Lys	
72					155					160						165	
74	aca	gga	aaa	tat	tac	gct	atg	gtg	aca	gga	aaa	gag	ggt	gaa	ttt	gaa	642
75	Thr	Gly	Lys	Tyr	Tyr	Ala	Met	Val	Thr	Gly	Lys	Glu	Gly	Glu	Phe	Glu	
76					170					175						180	
78	caa	tac	gaa	tta	aag	gct	gac	aaa	aat	gga	tac	ata	tcc	ggc	aaa	aag	690
79	Gln	Tyr	Glu	Leu	Lys	Ala	Asp	Lys	Asn	Gly	Tyr	Ile	Ser	Gly	Lys	Lys	
80	185				190					195						200	
82	gta	cg	ttt	aaa	atg	aat	tcc	cag	acg	gaa	ggg	atg	gca	gca	gac	738	
83	Val	Arg	Ala	Phe	Lys	Met	Asn	Ser	Gln	Thr	Glu	Gly	Met	Ala	Ala	Asp	
84					205					210						215	
86	gat	gaa	tac	ggc	agg	ctt	tat	atc	gca	gaa	gaa	gat	gag	gcc	att	tgg	786
87	Asp	Glu	Tyr	Gly	Arg	Leu	Tyr	Ile	Ala	Glu	Glu	Asp	Glu	Ala	Ile	Trp	
88					220					225						230	
90	aag	ttc	agc	gcc	gag	ccg	gac	ggc	agt	aac	gga	acg	gtt	atc	gac	834	
91	Lys	Phe	Ser	Ala	Glu	Pro	Asp	Gly	Gly	Ser	Asn	Gly	Thr	Val	Ile	Asp	
92					235					240						245	
94	cgt	gcc	gac	ggc	agg	cat	tta	act	cgt	gat	att	gaa	gga	ttg	acg	att	882
95	Arg	Ala	Asp	Gly	Arg	His	Leu	Thr	Arg	Asp	Ile	Glu	Gly	Leu	Thr	Ile	
96					250					255						260	
98	tac	tac	gct	gct	gac	ggg	aaa	ggc	tat	ctg	atg	gca	tca	agc	cag	gga	930
99	Tyr	Tyr	Ala	Ala	Asp	Gly	Lys	Gly	Tyr	Leu	Met	Ala	Ser	Ser	Gln	Gly	
100	265				270					275						280	
102	aac	agc	agc	tac	gcc	att	tat	gac	aga	caa	gga	aag	aac	aaa	tat	gtt	978
103	Asn	Ser	Ser	Tyr	Ala	Ile	Tyr	Asp	Arg	Gln	Gly	Lys	Asn	Lys	Tyr	Val	
104					285					290						295	
106	gct	gat	ttt	cgc	ata	aca	gac	ggt	cct	gaa	aca	gac	ggg	aca	agc	gt	1026
107	Ala	Asp	Phe	Arg	Ile	Thr	Asp	Gly	Pro	Glu	Thr	Asp	Gly	Thr	Ser	Asp	
108					300					305						310	
110	aca	gac	gga	att	gac	gtt	ctg	gg	ttc	gga	ctg	gg	cct	gaa	tat	ccg	1074
111	Thr	Asp	Gly	Ile	Asp	Val	Leu	Gly	Phe	Gly	Leu	Gly	Pro	Glu	Tyr	Pro	
112					315					320						325	
114	ttc	gg	ttt	gtc	gca	cag	gac	gg	aat	ata	gat	cac	ggc	caa			1122
115	Phe	Gly	Ile	Phe	Val	Ala	Gln	Asp	Gly	Glu	Asn	Ile	Asp	His	Gly	Gln	
116					330					335						340	
118	aag	gcc	aat	caa	aat	ttt	aaa	atc	gtg	cca	tgg	gaa	aga	att	gct	gt	1170
119	Lys	Ala	Asn	Gln	Asn	Phe	Lys	Ile	Val	Pro	Trp	Glu	Arg	Ile	Ala	Asp	
120					345					350						360	
122	caa	atc	ggt	ttc	cgc	ccg	ctg	gca	aat	gaa	cag	gtt	gac	ccg	aga	aaa	1218
123	Gln	Ile	Gly	Phe	Arg	Pro	Leu	Ala	Asn	Glu	Gln	Val	Asp	Pro	Arg	Lys	

## RAW SEQUENCE LISTING

DATE: 08/30/2006

PATENT APPLICATION: US/10/669,781A

TIME: 10:14:33

Input Set : F:\6031.79428 sequence.listing.ST25.txt

Output Set: N:\CRF4\08302006\J669781A.raw

124	365	370	375
126 ctg acc gac aga agc gga aaa taaacatgca aaaaggcagct tataacaagct			1269
127 Leu Thr Asp Arg Ser Gly Lys			
128	380		
130 gcttttgca tgtgaagaac g			
E--> 133 <210> SEQ ID NO: <del>SEQ ID NO: 2</del>			1290
134 <211> LENGTH: 383			
135 <212> TYPE: PRT			
136 <213> ORGANISM: Bacillus subtilis; Strain: B13			
E--> 138 <400> SEQUENCE: 2			
140 Met Asn His Ser Lys Thr Leu Leu Leu Thr Ala Ala Ala Gly Leu Met			
141 1 5 10 15			
144 Leu Thr Cys Gly Ala Val Ser Ser Gln Ala Lys His Lys Leu Ser Asp			
145 20 25 30			
148 Pro Tyr His Phe Thr Val Asn Ala Ala Ala Glu Thr Glu Pro Val Asp			
149 35 40 45			
152 Thr Ala Gly Asp Ala Ala Asp Asp Pro Ala Ile Trp Leu Asp Pro Lys			
153 50 55 60			
156 Thr Pro Gln Asn Ser Lys Leu Ile Thr Thr Asn Lys Lys Ser Gly Leu			
157 65 70 75 80			
160 Val Val Tyr Ser Leu Asp Gly Lys Met Leu His Ser Tyr Asn Thr Gly			
161 85 90 95			
164 Lys Leu Asn Asn Val Asp Ile Arg Tyr Asp Phe Pro Leu Asn Gly Lys			
165 100 105 110			
168 Lys Val Asp Ile Ala Ala Ala Ser Asn Arg Ser Glu Gly Lys Asn Thr			
169 115 120 125			
172 Ile Glu Ile Tyr Ala Ile Asp Gly Lys Asn Gly Thr Leu Gln Ser Met			
173 130 135 140			
176 Thr Asp Pro Asp His Pro Ile Ala Thr Ala Ile Asn Glu Val Tyr Gly			
177 145 150 155 160			
180 Phe Thr Leu Tyr His Ser Gln Lys Thr Gly Lys Tyr Tyr Ala Met Val			
181 165 170 175			
184 Thr Gly Lys Glu Gly Glu Phe Glu Gln Tyr Glu Leu Lys Ala Asp Lys			
185 180 185 190			
188 Asn Gly Tyr Ile Ser Gly Lys Lys Val Arg Ala Phe Lys Met Asn Ser			
189 195 200 205			
192 Gln Thr Glu Gly Met Ala Ala Asp Asp Glu Tyr Gly Arg Leu Tyr Ile			
193 210 215 220			
196 Ala Glu Glu Asp Glu Ala Ile Trp Lys Phe Ser Ala Glu Pro Asp Gly			
197 225 . 230 235 240			
200 Gly Ser Asn Gly Thr Val Ile Asp Arg Ala Asp Gly Arg His Leu Thr			
201 245 250 255			
204 Arg Asp Ile Glu Gly Leu Thr Ile Tyr Tyr Ala Ala Asp Gly Lys Gly			
205 260 265 270			
208 Tyr Leu Met Ala Ser Ser Gln Gly Asn Ser Ser Tyr Ala Ile Tyr Asp			
209 275 280 285			
212 Arg Gln Gly Lys Asn Lys Tyr Val Ala Asp Phe Arg Ile Thr Asp Gly			
213 290 295 300			
216 Pro Glu Thr Asp Gly Thr Ser Asp Thr Asp Gly Ile Asp Val Leu Gly			

RAW SEQUENCE LISTING DATE: 08/30/2006  
PATENT APPLICATION: US/10/669,781A TIME: 10:14:33

Input Set : F:\6031.79428 sequence.listing.ST25.txt  
Output Set: N:\CRF4\08302006\J669781A.raw

217 305 310 315 320  
220 Phe Gly Leu Gly Pro Glu Tyr Pro Phe Gly Ile Phe Val Ala Gln Asp  
221 325 330 335  
224 Gly Glu Asn Ile Asp His Gly Gln Lys Ala Asn Gln Asn Phe Lys Ile  
225 340 345 350  
228 Val Pro Trp Glu Arg Ile Ala Asp Gln Ile Gly Phe Arg Pro Leu Ala  
229 355 360 365  
232 Asn Glu Gln Val Asp Pro Arg Lys Leu Thr Asp Arg Ser Gly Lys  
233 370 375 380  
  
E--> 236 <210> SEQ ID NO: ~~SEQ\_ID\_NO+3~~  
237 <211> LENGTH: 25  
238 <212> TYPE: PRT  
239 <213> ORGANISM: Bacillus subtilis  
  
OK--> 241 <400> SEQUENCE: 3  
243 Leu Ser Asp Pro Tyr His Phe Thr Val Asn Ala Ala Ala Glu Thr Glu  
244 1 5 10 15  
247 Pro Val Asp Thr Ala Gly Asp Ala Ala  
248 20 25  
  
E--> 251 <210> SEQ ID NO: ~~SEQ\_ID\_NO+4~~  
252 <211> LENGTH: 32  
253 <212> TYPE: PRT  
254 <213> ORGANISM: Bacillus subtilis  
  
OK--> 256 <400> SEQUENCE: 4  
258 Leu Ser Asp Pro Tyr His Phe Thr Val Asn Ala Ala Ala Glu Thr Glu  
259 1 5 10 15  
262 Pro Val Asp Thr Ala Gly Asp Ala Ala Asp Asp Pro Ala Ile Leu Asp  
263 20 25 30  
  
E--> 266 <210> SEQ ID NO: ~~SEQ\_ID\_NO+5~~  
267 <211> LENGTH: 8  
268 <212> TYPE: PRT  
269 <213> ORGANISM: Bacillus subtilis  
  
OK--> 271 <400> SEQUENCE: 5  
273 Tyr Tyr Ala Met Val Thr Gly Lys  
274 1 5  
  
E--> 277 <210> SEQ ID NO: ~~SEQ\_ID\_NO+6~~  
278 <211> LENGTH: 10  
279 <212> TYPE: PRT  
280 <213> ORGANISM: Bacillus subtilis  
  
OK--> 282 <400> SEQUENCE: 6  
284 Glu Gly Glu Phe Glu Gln Tyr Glu Leu Lys  
285 1 5 10  
  
E--> 288 <210> SEQ ID NO: ~~SEQ\_ID\_NO+7~~  
289 <211> LENGTH: 9  
290 <212> TYPE: PRT  
291 <213> ORGANISM: Bacillus subtilis  
  
E--> 293 <400> SEQUENCE: 7  
295 Met Leu His Ser Tyr Asn Thr Gly Lys  
296 1 5  
  
E--> 299 <210> SEQ ID NO: ~~SEQ\_ID\_NO+8~~

## RAW SEQUENCE LISTING

DATE: 08/30/2006

PATENT APPLICATION: US/10/669,781A

TIME: 10:14:34

Input Set : F:\6031.79428 sequence.listing.ST25.txt  
Output Set: N:\CRF4\08302006\J669781A.raw

300 <211> LENGTH: 6  
301 <212> TYPE: PRT  
302 <213> ORGANISM: Bacillus subtilis  
E--> 304 <400> SEQUENCE: 8  
306 Ile Val Pro Trp Glu Arg  
307 1 5  
E--> 310 <210> SEQ ID NO: SEQ\_ID\_NO:9  
311 <211> LENGTH: 25  
312 <212> TYPE: PRT  
313 <213> ORGANISM: Bacillus subtilis  
E--> 315 <400> SEQUENCE: 9  
317 Ile Val Pro Trp Glu Arg Ile Ala Asp Gln Ile Gly Phe Arg Pro Leu  
318 1 5 10 15  
321 Ala Asn Glu Gln Val Asp Pro Arg Lys  
322 20 25  
E--> 325 <210> SEQ ID NO: SEQ\_ID\_NO:10  
326 <211> LENGTH: 30  
327 <212> TYPE: PRT  
328 <213> ORGANISM: Bacillus subtilis  
E--> 330 <400> SEQUENCE: 10  
332 Asn Gly Thr Leu Gln Ser Met Thr Asp Pro Asp His Pro Ile Ala Thr  
333 1 5 10 15  
336 Ala Ile Asn Glu Val Tyr Gly Phe Thr Leu Trp His Ser Gln  
337 20 25 30  
E--> 340 <210> SEQ ID NO: SEQ\_ID\_NO:11  
341 <211> LENGTH: 23  
342 <212> TYPE: PRT  
343 <213> ORGANISM: Bacillus subtilis  
E--> 345 <400> SEQUENCE: 11  
347 Tyr Val Ala Asp Phe Arg Ile Thr Asp Gly Pro Glu Thr Asp Gly Thr  
348 1 5 10 15  
351 Ser Asp Asp Asp Gly Ile Ile  
352 20  
E--> 355 <210> SEQ ID NO: SEQ\_ID\_NO:12  
356 <211> LENGTH: 7  
357 <212> TYPE: PRT  
358 <213> ORGANISM: Bacillus subtilis  
E--> 360 <400> SEQUENCE: 12  
362 Leu Thr Asp Arg Ser Gly Lys  
363 1 5  
E--> 366 <210> SEQ ID NO: SEQ\_ID\_NO:13  
367 <211> LENGTH: 13  
368 <212> TYPE: PRT  
369 <213> ORGANISM: Bacillus subtilis  
E--> 371 <400> SEQUENCE: 13  
373 Val Asp Ile Ala Ala Ala Ser Asn Arg Ser Glu Gly Lys  
374 1 5 10  
E--> 377 <210> SEQ ID NO: SEQ\_ID\_NO:14  
378 <211> LENGTH: 19

## RAW SEQUENCE LISTING

DATE: 08/30/2006

PATENT APPLICATION: US/10/669,781A

TIME: 10:14:34

Input Set : F:\6031.79428 sequence.listing.ST25.txt  
Output Set: N:\CRF4\08302006\J669781A.raw

379 <212> TYPE: PRT  
380 <213> ORGANISM: Bacillus subtilis  
~~EK~~ 382 <400> SEQUENCE: 14  
384 Ile Ala Asp Gln Ile Gly Phe Arg Pro Leu Ala Asn Glu Gln Val Asp  
385 1 5 10 15  
388 Pro Arg Lys  
E--> 392 <210> SEQ ID NO: ~~SEQ\_ID\_NO+15~~  
393 <211> LENGTH: 6  
394 <212> TYPE: PRT  
395 <213> ORGANISM: Bacillus subtilis  
~~EK~~ 397 <400> SEQUENCE: 15  
399 Ala Asn Gln Asn Phe Lys  
400 1 5  
E--> 403 <210> SEQ ID NO: ~~SEQ\_ID\_NO+16~~  
404 <211> LENGTH: 5  
405 <212> TYPE: PRT  
406 <213> ORGANISM: Bacillus subtilis  
~~EK~~ 408 <400> SEQUENCE: 16  
410 Val Arg Ala Phe Lys  
411 1 5  
E--> 414 <210> SEQ ID NO: ~~SEQ\_ID\_NO+17~~  
415 <211> LENGTH: 11  
416 <212> TYPE: PRT  
417 <213> ORGANISM: Bacillus subtilis  
~~EK~~ 419 <400> SEQUENCE: 17  
421 Leu Asn Asn Val Asp Ile Arg Tyr Asp Phe Pro  
422 1 5 10  
E--> 425 <210> SEQ ID NO: ~~SEQ\_ID\_NO+18~~  
426 <211> LENGTH: 15  
427 <212> TYPE: PRT  
428 <213> ORGANISM: Bacillus subtilis  
~~EK~~ 430 <400> SEQUENCE: 18  
432 Leu Asn Asn Val Asp Ile Arg Tyr Asp Phe Pro Leu Asn Gly Lys  
433 1 5 10 15  
E--> 436 <210> SEQ ID NO: ~~SEQ\_ID\_NO+19~~  
437 <211> LENGTH: 11  
438 <212> TYPE: PRT  
439 <213> ORGANISM: Bacillus subtilis  
~~EK~~ 441 <400> SEQUENCE: 19  
443 Asn Thr Ile Glu Ile Tyr Ala Ile Asp Gly Lys  
444 1 5 10  
E--> 447 <210> SEQ ID NO: ~~SEQ\_ID\_NO+20~~  
448 <211> LENGTH: 11  
449 <212> TYPE: PRT  
450 <213> ORGANISM: Bacillus subtilis  
~~EK~~ 452 <400> SEQUENCE: 20  
454 Ser Gly Leu Val Val Tyr Ser Leu Asp Gly Lys  
455 1 5 10  
E--> 458 <210> SEQ ID NO: ~~SEQ\_ID\_NO+21~~

RAW SEQUENCE LISTING DATE: 08/30/2006  
 PATENT APPLICATION: US/10/669,781A TIME: 10:14:34

Input Set : F:\6031.79428 sequence.listing.ST25.txt  
 Output Set: N:\CRF4\08302006\J669781A.raw

459 <211> LENGTH: 22  
 460 <212> TYPE: PRT  
 461 <213> ORGANISM: Bacillus subtilis  
 E--> 463 <400> SEQUENCE: 21  
 465 Phe Ser Ala Glu Pro Asp Gly Gly Ser Asn Gly Thr Val Ile Asp Arg  
 466 1 5 10 15  
 469 Ala Asp Gly Arg His Leu  
 470 20  
 E--> 473 <210> SEQ ID NO: ~~SEQ\_ID\_NO:22~~  
 474 <211> LENGTH: 23  
 475 <212> TYPE: DNA  
 476 <213> ORGANISM: Artificial  
 478 <220> FEATURE:  
 479 <223> OTHER INFORMATION: Synthesized  
 482 <220> FEATURE:  
 483 <221> NAME/KEY: modified\_base  
 484 <222> LOCATION: (1)..(23)  
 485 <223> OTHER INFORMATION: All Ns represents inosine  
 E--> 487 <400> SEQUENCE: 22  
 W--> 488 tcngatccnt atcattttac ngt 23  
 E--> 491 <210> SEQ ID NO: ~~SEQ\_ID\_NO:23~~  
 492 <211> LENGTH: 23  
 493 <212> TYPE: DNA  
 494 <213> ORGANISM: Artificial  
 496 <220> FEATURE:  
 497 <223> OTHER INFORMATION: Synthesized  
 500 <220> FEATURE:  
 501 <221> NAME/KEY: modified\_base  
 502 <222> LOCATION: (1)..(23)  
 503 <223> OTHER INFORMATION: N represents inosine  
 E--> 506 <400> SEQUENCE: 23  
 507 agmggaaaat catancyrat atc 23  
 E--> 510 <210> SEQ ID NO: ~~SEQ\_ID\_NO:24~~  
 511 <211> LENGTH: 22  
 512 <212> TYPE: DNA  
 513 <213> ORGANISM: Artificial  
 515 <220> FEATURE:  
 516 <223> OTHER INFORMATION: Synthesized  
 518 <220> FEATURE:  
 519 <221> NAME/KEY: modified\_base  
 520 <222> LOCATION: (1)..(22)  
 521 <223> OTHER INFORMATION: All N's represent inosine  
 E--> 523 <400> SEQUENCE: 24  
 524 cttcnganck rttnangcn gc 22  
 E--> 527 <210> SEQ ID NO: ~~SEQ\_ID\_NO:25~~  
 528 <211> LENGTH: 20  
 529 <212> TYPE: DNA  
 530 <213> ORGANISM: Artificial  
 532 <220> FEATURE:

RAW SEQUENCE LISTING DATE: 08/30/2006  
PATENT APPLICATION: US/10/669,781A TIME: 10:14:34

Input Set : F:\6031.79428 sequence.listing.ST25.txt  
Output Set: N:\CRF4\08302006\J669781A.raw

533 <223> OTHER INFORMATION: Synthesized  
536 <220> FEATURE:  
537 <221> NAME/KEY: modified\_base  
538 <222> LOCATION: (1)..(20)  
539 <223> OTHER INFORMATION: All N's represent inosine  
~~OK~~ 541 <400> SEQUENCE: 25 20  
542 tgcacngcra tnckttccca  
E--> 545 <210> SEQ ID NO: ~~SEQ\_ID\_NO~~ 26  
546 <211> LENGTH: 20  
547 <212> TYPE: DNA  
548 <213> ORGANISM: Artificial  
550 <220> FEATURE:  
551 <223> OTHER INFORMATION: Synthesized  
~~OK~~ 553 <400> SEQUENCE: 26 20  
554 gcratmggat gatcmggatc  
E--> 557 <210> SEQ ID NO: ~~SEQ\_ID\_NO~~ 27  
558 <211> LENGTH: 21  
559 <212> TYPE: DNA  
560 <213> ORGANISM: Artificial  
562 <220> FEATURE:  
563 <223> OTHER INFORMATION: Synthesized  
566 <220> FEATURE:  
567 <221> NAME/KEY: modified\_base  
568 <222> LOCATION: (1)..(21)  
569 <223> OTHER INFORMATION: N represents inosine  
~~OK~~ 571 <400> SEQUENCE: 27 21  
572 ttccataytg tcaaattcnc c  
E--> 575 <210> SEQ ID NO: ~~SEQ\_ID\_NO~~ 28  
576 <211> LENGTH: 26  
577 <212> TYPE: DNA  
578 <213> ORGANISM: Artificial  
580 <220> FEATURE:  
581 <223> OTHER INFORMATION: Synthesized  
584 <220> FEATURE:  
585 <221> NAME/KEY: modified\_base  
586 <222> LOCATION: (1)..(26)  
587 <223> OTHER INFORMATION: All N's represent inosine  
~~OK~~ 589 <400> SEQUENCE: 28 26  
590 ttnccngrt tatangaatg narcat  
E--> 593 <210> SEQ ID NO: ~~SEQ\_ID\_NO~~ 29  
594 <211> LENGTH: 20  
595 <212> TYPE: DNA  
596 <213> ORGANISM: Artificial  
598 <220> FEATURE:  
599 <223> OTHER INFORMATION: Synthesized  
602 <220> FEATURE:  
603 <221> NAME/KEY: modified\_base  
604 <222> LOCATION: (1)..(20)  
605 <223> OTHER INFORMATION: N represents inosine

RAW SEQUENCE LISTING DATE: 08/30/2006  
 PATENT APPLICATION: US/10/669,781A TIME: 10:14:34

Input Set : F:\6031.79428 sequence.listing.ST25.txt  
 Output Set: N:\CRF4\08302006\J669781A.raw

<del>E</del>	607 <400> SEQUENCE: 29 608 ccatcratng catarattc	20
<del>E</del> -->	611 <210> SEQ ID NO: <del>SEQ-ID-NO.</del> 30 612 <211> LENGTH: 18 613 <212> TYPE: DNA 614 <213> ORGANISM: Artificial 616 <220> FEATURE: 617 <223> OTHER INFORMATION: Synthesized 620 <220> FEATURE: 621 <221> NAME/KEY: modified_base 622 <222> LOCATION: (1)..(18) 623 <223> OTHER INFORMATION: N represents inosine	
<del>E</del>	<del>E</del> > 626 <400> SEQUENCE: 30 627 tttaaarttgcgrttngc	18
<del>E</del> -->	630 <210> SEQ ID NO: <del>SEQ-ID-NO.</del> 31 631 <211> LENGTH: 18 632 <212> TYPE: DNA 633 <213> ORGANISM: Artificial 635 <220> FEATURE: 636 <223> OTHER INFORMATION: Synthesized 639 <220> FEATURE: 640 <221> NAME/KEY: modified_base 641 <222> LOCATION: (1)..(18) 642 <223> OTHER INFORMATION: All N's represent inosine	
<del>E</del>	<del>E</del> /> 645 <400> SEQUENCE: 31 646 tttnccngtn accatngc	18
<del>E</del> -->	649 <210> SEQ ID NO: <del>SEQ-ID-NO.</del> 32 650 <211> LENGTH: 38 651 <212> TYPE: DNA 652 <213> ORGANISM: Artificial 654 <220> FEATURE: 655 <223> OTHER INFORMATION: Synthesized 658 <220> FEATURE: 659 <221> NAME/KEY: misc_feature 660 <222> LOCATION: (21)..(21) 661 <223> OTHER INFORMATION: n is a, c, g, or t	
<del>E</del>	<del>E</del> > 663 <400> SEQUENCE: 32 664 gayccdtayc aytyacdgt naaygcdgac gcdgaaac	38
<del>E</del> -->	667 <210> SEQ ID NO: <del>SEQ-ID-NO.</del> 33 668 <211> LENGTH: 52 669 <212> TYPE: DNA 670 <213> ORGANISM: Artificial 672 <220> FEATURE: 673 <223> OTHER INFORMATION: Synthesized 676 <220> FEATURE: 677 <221> NAME/KEY: misc_feature 678 <222> LOCATION: (7)..(14) 679 <223> OTHER INFORMATION: Mfe I site 681 <220> FEATURE:	

RAW SEQUENCE LISTING DATE: 08/30/2006  
 PATENT APPLICATION: US/10/669,781A TIME: 10:14:34

Input Set : F:\6031.79428 sequence.listing.ST25.txt  
 Output Set: N:\CRF4\08302006\J669781A.raw

```

682 <221> NAME/KEY: RBS
683 <222> LOCATION: (14)..(19)
685 <220> FEATURE:
686 <221> NAME/KEY: CDS
687 <222> LOCATION: (27)..(50)
E--> 689 <400> SEQUENCE: 33
690 gtttctcaat tgaaggagga atttaa atg ctg tcc gat cct tat cat ttt ac      52
691                      Met Leu Ser Asp Pro Tyr His Phe
692                      1                   5
E--> 695 <210> SEQ ID NO: SEQ_ID_NO+34
696 <211> LENGTH: 8
697 <212> TYPE: PRT
698 <213> ORGANISM: Artificial
700 <220> FEATURE:
701 <223> OTHER INFORMATION: Synthetic Construct
E--> 703 <400> SEQUENCE: 34
705 Met Leu Ser Asp Pro Tyr His Phe
706 1           5
E--> 709 <210> SEQ ID NO: SEQ_ID_NO+35
710 <211> LENGTH: 35
711 <212> TYPE: DNA
712 <213> ORGANISM: Artificial
714 <220> FEATURE:
715 <223> OTHER INFORMATION: Synthesized
718 <220> FEATURE:
719 <221> NAME/KEY: misc_feature
720 <222> LOCATION: (6)..(11)
721 <223> OTHER INFORMATION: Sal I site
E--> 723 <400> SEQUENCE: 35
724 aataaagtgcga cgtacgaccg gattccggct gtgct      35
E--> 727 <210> SEQ ID NO: SEQ_ID_NO+36
728 <211> LENGTH: 34
729 <212> TYPE: DNA
730 <213> ORGANISM: Artificial
732 <220> FEATURE:
733 <223> OTHER INFORMATION: Synthesized
736 <220> FEATURE:
737 <221> NAME/KEY: misc_feature
738 <222> LOCATION: (6)..(11)
739 <223> OTHER INFORMATION: Bgl II site
E--> 741 <400> SEQUENCE: 36
742 aataaaagatc ttttccgct tctgtcggtc agtt      34

```

VERIFICATION SUMMARY  
PATENT APPLICATION: US/10/669,781A

DATE: 08/30/2006  
TIME: 10:14:35

Input Set : F:\6031.79428 sequence.listing.ST25.txt  
Output Set: N:\CRF4\08302006\J669781A.raw

L:17 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQ ID NO  
L:27 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQUENCE ID NOS:0 differs:1  
L:133 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQ ID NO  
L:138 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQUENCE ID NOS:0 differs:2  
L:236 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQ ID NO  
L:241 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQUENCE ID NOS:0 differs:3  
L:251 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQ ID NO  
L:256 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQUENCE ID NOS:0 differs:4  
L:266 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQ ID NO  
L:271 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQUENCE ID NOS:0 differs:5  
L:277 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQ ID NO  
L:282 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQUENCE ID NOS:0 differs:6  
L:288 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQ ID NO  
L:293 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQUENCE ID NOS:0 differs:7  
L:299 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQ ID NO  
L:304 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQUENCE ID NOS:0 differs:8  
L:310 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQ ID NO  
L:315 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQUENCE ID NOS:0 differs:9  
L:325 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQ ID NO  
L:330 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQUENCE ID NOS:0 differs:10  
L:340 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQ ID NO  
L:345 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQUENCE ID NOS:0 differs:11  
L:355 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQ ID NO  
L:360 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQUENCE ID NOS:0 differs:12  
L:366 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQ ID NO  
L:371 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQUENCE ID NOS:0 differs:13  
L:377 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQ ID NO  
L:382 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQUENCE ID NOS:0 differs:14  
L:392 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQ ID NO  
L:397 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQUENCE ID NOS:0 differs:15  
L:403 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQ ID NO  
L:408 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQUENCE ID NOS:0 differs:16  
L:414 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQ ID NO  
L:419 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQUENCE ID NOS:0 differs:17  
L:425 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQ ID NO  
L:430 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQUENCE ID NOS:0 differs:18  
L:436 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQ ID NO  
L:441 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQUENCE ID NOS:0 differs:19  
L:447 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQ ID NO  
L:452 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQUENCE ID NOS:0 differs:20  
L:458 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQ ID NO  
L:463 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQUENCE ID NOS:0 differs:21  
L:473 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQ ID NO  
L:487 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQUENCE ID NOS:0 differs:22  
L:488 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:22 after pos.:0  
L:491 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQ ID NO  
L:506 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQUENCE ID NOS:0 differs:23  
M:341 Repeated in SeqNo=0

12

VERIFICATION SUMMARY DATE: 08/30/2006  
PATENT APPLICATION: US/10/669,781A TIME: 10:14:35

Input Set : F:\6031.79428 sequence.listing.ST25.txt  
Output Set: N:\CRF4\08302006\J669781A.raw

L:510 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQ ID NO  
L:523 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQUENCE ID NOS:0 differs:24  
L:527 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQ ID NO  
L:541 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQUENCE ID NOS:0 differs:25